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Ashley Williamson and Shaima Nasiri
Program Managers, DOE Atmospheric System Research Program
Climate and Environmental Sciences Division
SC-23, Germantown Building
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1290

Dear Drs. Williamson and Nasiri:

Dr. Andrew Vogelmann and I are writing in our capacities as the co-principal and principal investigators of the large-eddy simulation (LES) modeling pilot project for the DOE Atmospheric Radiation Measurement (ARM) Climate Research Facility, referred to as the LES ARM Symbiotic Simulation and Observation (LASSO) project. As participants within the ARM facility, we are excited to work with the awardees of projects through your Atmospheric System Research (ASR) Program calls. We particularly value these interactions, as they are important for getting feedback during development of the LASSO workflow.

During the next roughly two years, the LASSO project will be developing an LES workflow to routinely simulate shallow convection at the ARM Southern Great Plains megasite, and through this process, we will make available a series of LES simulations and accompanying diagnostic datasets that will be useful for ASR researchers. We will also develop an ensemble of model forcing data methodologies, metrics to evaluate and intercompare the simulations, and software to simplify reproduction of the simulations.

As the pilot phase progresses toward completion, the deliverables will be made available to researchers. Our timeline is as follows:

June 2016	Availability of preliminary LES model configurations for the SAM and WRF models for a bulk-microphysics configuration.
	Initial simulations for shallow convection cases during spring–summer 2015 (6–10 cases) including an ensemble of forcing data, model output, associated ARM data diagnostics, and metrics comparing the model and observations.

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January 2017	Simulations for shallow convection cases during spring–summer 2016 that additionally include input data from the new ARM Boundary Facilities.
	SAM and WRF model configurations plus simulations for the above cases using spectral bin microphysics.
April 2017	Additional test cases for year-round shallow cloud conditions.
	Transition of the LASSO pilot project to ongoing, routine ARM simulations for shallow convection events using the configuration (bulk microphysics and possibly also spectral bin) and model selected for operations (SAM or WRF).
	Beta software for simplified simulation reproduction and metric generation.

The LASSO products during the pilot project period will be evolving. While the data packaging and analysis tools will improve over time, the simulations and products we share will be of high quality, and we will note any potential issues we are aware of. We will share these evolving results to provide added value to these PIs' projects. In return, we will anticipate feedback from the PIs' regarding how to improve the LASSO workflow and data products.

Sincerely,

Dr. William I. Gustafson Jr.
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